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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,842	12/31/2001	Krishnan Santhana Rengarajan	TI-33370/TXN-021	5345
23494	7590	03/09/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			AGHDAM, FRESHTEH N	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,842

Applicant(s)

RENGARAJAN, KRISHNAN  
SANTHANA

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9-12, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4, 8, 13-17 and 20-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities:

“to” between “data” and “according” should be removed on Page 3, Line 17.

“an” between “the” and “analog” should be removed on Page 5, Line 2.

“the input signal 111” should be replaced by “the input signal 119” on Page 7, Line 16.

Appropriate correction is required.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, “the CLKOUT-FINAL on line 389” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The output (155) of the multiplexer 340 should be assigned a different number than its input (155).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 6, 9, 10, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al (6,760,389), and further in view of Eglit (US Pub. 2002/0031198).

As to claims 1, 6, 11, and 18, Mukherjee et al teach a data and clock recovery system comprising receiving an analog signal 125, examining the analog signal for a transition in block 205, capturing the data tokens by sampling the analog signal 125 wherein the sampling is occurred in transition detector 205. Mukherjee et al do not teach selecting (i.e. determining) the data token as one of the sequence of data tokens

instead of another data token. Eglit, in the same field of endeavor, teaches selecting a data token responsive to the result of the transition detection (Pg. 5, Par. 91). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Eglit with Mukherjee et al in order to select a data token.

Claims 2, 3, 7, 12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al and Eglit, further in view of the admitted prior art.

As to claims 2, 12, and 19, Mukherjee et al and Eglit teach all the subject matters claimed above except for the data token is received in the analog signal after the transition. The admitted prior art teaches a sampling clock is generated which specifies the specific appropriate time points for sampling a signal received on a serial communication channel wherein an ideal sampling clock generally causes the signal portions to be sampled in the center of (or within) a "data eye" portion in which the signal level closely represents an encoded data token in a typical recovery approach in a receiver system (Pg. 2, Lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of the admitted prior art with Mukherjee et al and Eglit in order to make sure that the sampled data is taken after the analog signal has reached stability.

As to claims 3 and 7, Mukherjee et al and Eglit teach all the subject matters claimed above except for each sequence of data token comprising a bit. The admitted prior art discloses that data token is a bit representing one of two possible values.

As to claims 5 and 9, Mukherjee et al teach a data recovery system that generates sequence of data tokens based on the transition detection 205.

As to claim 10, Eglit discloses a data recovery system in a receiver to receive the data encoded 127 in a serial communication channel (Fig. 1; Pg. 3, Par. 49). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Eglit with Mukherjee et al in order to recover data encoded in a serial communication channel.

### ***Allowable Subject Matter***

Claims 4, 8, 13-17, and 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 4 and 8, the prior art of record fails to teach a data recovery system wherein generating a first plurality of data tokens by sampling said analog signal at time points specified by a sampling clock signal wherein providing comprises selecting the data token generated by the capturing instead of a corresponding one of said first plurality of data tokens.

As to claims 13 and 20, the prior art of record fails to teach a data recovery system for receiving the analog signal and generating a clock-out signal delayed in phase from a sampling clock signal wherein said sampling clock signal is based on said analog signal.

### ***Conclusion***

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rickard (US Patent 5,828,293), Williams et al (US Patent 6,711,226), Ko (US Patent 5,483,292), Szczepanek et al (4,674,086), Sasaki (US Patent 5,789,988), Shibata (US Patent 5,977,821).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam

February 25, 2005

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**MOHAMMED GHAYOUR**  
**SUPERVISORY PATENT EXAMINER**